



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,339	12/15/2003	Rajesh K. Saini	2001-IP-005484U1P1	3700
71407	7590	04/27/2011		
ROBERT A. KENT P.O. BOX 1431 DUNCAN, OK 73536			EXAMINER LIGHTFOOT, ELENA TSOY	
			ART UNIT 1715	PAPER NUMBER
			NOTIFICATION DATE 04/27/2011	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ROBERT.KENT1@HALLIBURTON.COM
Tammy.Knight@Halliburton.com

Advisory Action

The Request for Reconsideration filed on April 18, 2011 under 37 CFR 1.116 in reply to the final rejection has been considered but is not deemed to place the application in condition for allowance for the reasons of record set forth in the Final Office Action mailed on February 25, 2011.

Response to Arguments

Applicant's arguments filed April 18, 2011 have been fully considered but they are not persuasive.

(A) Applicants submit that the Office Action at page 15 indicates that "Nguyen teaches that the treatment chemical may be absorbed or coated on the proppant or even may be in solid particulate form ... the treatment chemical may be introduced into a treating fluid either in solid particulate form or in liquid form in a similar manner as a tackifying compound, i.e. in the form of a solution in a solvent." While Nguyen describes the fact that a solvent can be used with the tackifying agent in order to create a liquid solution of the tackifying agent, this disclosure is immaterial to the form (liquid or solid) of the treatment chemical. (Nguyen at col. 5, ll.55-58). Nguyen does not describe the use of a solvent or plasticizer to create an on-the-fly coatable treatment chemical, rather Nguyen teaches that a solvent can be used to affect the form of the tackifying agent itself.

The Examiner respectfully disagrees with this argument. Nguyen et al teaches that in a mixture of a proppant, a liquid or solution of a tackifying compound, a solution of a treatment chemical and, optionally, a hardenable resin, the tackifying compound coats at least a portion of the proppant **upon** admixture therewith (See column 3, lines 40-46). Obviously, the treatment chemical mixed with the tackifying compound would also be coated on the proppant together with the tackifying compound **upon** admixture with the proppant, i.e. on-the-fly. Thus, on-the-fly coating treatment chemical is implied in Nguyen.

(B) Applicants submit that the Office Action at pages 4-5 relies on Lee as teaching the replacement of conventional gravel pack sand with "polymerized alpha-hydroxycarboxylic acid coated proppants such as polyglycolic-acid-coated sand." Applicants note that the pending claims are not directed to simply coated particulates. In Lee, the disclosure teaches polymerizing a monomer of glycolic acid in presence of proppant by heating to an elevated temperature. (Lee at col. 3, I. 64 - col. 4, I. 11). That is, Lee performs condensation polymerization with the removal of water in the presence of the particulate; this is not a method amenable to on-the-fly

Art Unit: 1715

use at the well site. By contrast, the pending claims take an already prepared polymer and make it into a coatable substance by the addition of a solvent or plasticizer.

The Examiner respectfully disagrees with this argument. Lee is a secondary reference which is relied upon to show that polyglycolic-acid is **suitable** for the use as acid releasing treatment chemical, and may be used for coating a proppant (See column 2, lines 51-64). Therefore, it is irrelevant whether or not Lee teaches claimed methods of coating that are already taught by a primary reference of Nguyen. It is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

(C) Applicants submit that with respect to dependent claims 48, 54, and 61, the Examiner alleges that the limitation is optional. (Office Action at pp. 9 and 15). Applicants respectfully disagree. Specifically, the limitation is not optional because those claims require the acid-releasing degradable material to comprise a poly(orthoester). As the Office Action notes, claim 42 does not require the presence of poly(orthoester)." (Office Action at p. 15). Applicants agree that claim 42 does not require that element, but the dependent claim at issue does make that element required. That is, while the acid-releasing degradable material must comprise at least one of the materials listed in the Markush group of the claims from which they depend, the additional limitation introduced in claims 48, 54, and 61 requires that the acid-releasing degradable material comprise a specific material--namely a poly(orthoester)--even if other materials are present. Thus, Applicants again request that the limitation be given the proper patentable weight during prosecution.

The argument is unconvincing because claim 42 recites at least one member of a Markush group, and thus reads on any one member of the Markush group with all other members including poly(orthoester) being **optional** in claim 42. Moreover, claims 48, 54, and 61 were additionally rejected over Mikos.

B. Claims 42-48, 55-59, and 61 over Nguyen, Lee, Still, and Murphey

Applicants submit that the combination of Nguyen, Lee, and Still fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. Murphey fails to render obvious the deficiencies of Nguyen, Lee, and Still. Rather, the Examiner merely relied on Murphey for its alleged teaching that a particulate "can be coated rapidly and continuously by admixing in a stream (on-the-fly)... instead of batch mixing which requires a period of time..." See Office Action at 10.

Art Unit: 1715

The Examiner respectfully disagrees with this argument for the reasons discussed above.

C. Claims 42-48, 55-59, and 61 over Nguyen, Lee, Still, and McDougall

Applicants submit that the combination of Nguyen, Lee, and Still fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. McDougall fails to render obvious the deficiencies of Nguyen, Lee, and Still. Rather, the Examiner merely relied on McDougall for its alleged teaching of adding a friction reducing agent such as polyacrylamide or alcohol to the fluid suspension of Nguyen. Office Action at 11. Applicants note that the Examiner appears to be indicating that simply combining any of the components of McDougall with a fluid used in a fracturing operation would meet the limitations of the claims. However, the claims are specific as to what components are combined and cannot therefore be taught by simple additives in a fluid, where they may or may not combine with any of the other components.

The Examiner respectfully disagrees with this argument. McDougall et al teaches that generally a fracturing fluid comprises a viscous or gelled polymeric solution, a propping agent, a chemical breaker and other additives commonly used in fracturing fluids (See column 2, line 65 to column 3, line 1), friction-reducing agents such as small amounts of high molecular weight linear polymers such as polyacrylamide or **alcohol** to reduce tension and resistance to return flow (See column 8, lines 7-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a friction-reducing agent such as polyacrylamide or alcohol to the fluid suspension of Nguyen et al with the expectation of providing the desired reduced tension, as taught by McDougall et al.

Since Applicants did not provide reasons why polyacrylamide or alcohol could not be added to a fracturing fluid of Nguyen to reduce tension and resistance to return flow, the rejection stands.

D. Claims 42-61 over Nguyen, Lee, and further in view of Murphey, McDougall, or Mikos

Applicants submit that the combination of Nguyen, Lee, and Still fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. The argument with respect to independent claim 42 is equally applicable to independent claim 49. Mikos fails to render obvious the deficiencies of Nguyen, Lee, and Still. Rather, the Examiner merely relied on Mikos for its alleged teaching of certain degradable synthetic polymers and noted that "it is well known in the art that all these polymers hydrolyze with release of an acid." (Office Action at p. 12). Applicants note that Mikos is directed towards medical devices, but as to the issue of what is "well known in the art," the art of medical devices is not the art at issue. (Mikos Abstract). Thus, it is not surprising that Mikos does not disclose at least "combining an acid- releasing degradable

Art Unit: 1715

material with a solvent or a plasticizer to create a coating solution" as required by independent claims 42 or 49, or "combining an acid-releasing degradable material with a plasticizer to create a coating solution" as required by independent claim 55. Mikos does not seek to make a degradable material coatable, but rather seeks to use a solid degradable material as "scaffolding" for tissue growth. (Mikos at col. 4, I. 66 -col. 5, I. 3). Claims 43-48, 50-54, and 56-61 depend, either directly or indirectly, from claims 42, 49, and 55 and therefore include all the limitations of those independent claims, respectively. Thus, claims 42-61 are patentable over the combination of Nguyen, Lee, Still, and Mikos. (35 U.S.C. §112, paragraph 4). Accordingly, for at least these reasons, Applicants respectfully request withdrawal of this rejection.

The Examiner respectfully disagrees with this argument. Mikos et al is a tertiary reference which is relied upon to show that a synthetic polymer which degrades in a controlled manner by hydrolysis (i.e. in water) include polyglycolic acid, polylactic acid, polyorthoester, polyanhydride, or copolymers thereof (See Abstract). Therefore, it is irrelevant whether or not the synthetic polymer of Mikos is usable in medical devices since polyglycolic acid, polylactic acid, polyorthoester, polyanhydride, or copolymers thereof will hydrolyze with water in any application as chemical properties of a compound depend on its structure not on intent of the use of the compound.

E. Claims 42-61 over Nguyen, Lee, and Still or over Nguyen, Lee, Still, and Murphey or over Nguyen, Lee, Still, and McDougall or over Nguyen, Lee, Still, and Mikos all as applied above and in further view of Cooke* and Schwartz

Applicants submit that the combination of Nguyen, Lee, and Still and the combination of those references with any of Murphey, McDougall, or Mikos fails to establish that every limitation of independent claims 42, 49, and 55 was known in the prior art. In addition, Cooke and Schwartz do not remedy the deficiencies of the above combinations. Rather, the Office Action merely relied on Cooke for its disclosure of reducing the viscosity of a degradable polymer with a plasticizing agent. (Office Action at p. 13). As to Schwartz, the Office Action cites that reference for the proposition that poly-EO, poly-PG, and poly-EG can be used as friction reducers in fracturing fluids. (Office Action at p. 13).

The Examiner respectfully disagrees with this argument. **Cooke, Jr.** teaches that a degradable polymer such as polylactide (See column 7, lines 12-13) may be plasticized with a known plasticizing agent, such as a polyhydric alcohol, glycol or other relatively low molecular weight compound that mixes with the polymer to decrease its viscosity before it is placed in a wellbore. (See column 7, lines 21-25). **Schwartz et al** teaches that polyethylene oxide, polypropylene glycols or polyethylene glycols are suitable for the use in fracturing fluids as

Art Unit: 1715

friction reducing compounds (i.e. claimed plasticizers enhancing flow of the treating fluid) (See P70). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added polyethylene oxide, polypropylene glycols and polyethylene glycols to a fracturing fluid of the cited prior art with the expectation of providing the desired reduced viscosity and friction, as taught by Cooke, Jr. and Schwartz et al.

In other words, Cooke and Schwartz show that claimed limitations were known in the art, and thus, claimed limitations are obvious over cited prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELENA Tsoy LIGHTFOOT whose telephone number is (571)272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1715

April 22, 2011

/Elena Tsoy Lightfoot/